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Cooperatively Enhancing Military Transparency on the Korean Peninsula: A Comprehensive Approach

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Cooperatively Enhancing Military Transparency on the Korean Peninsula: A Comprehensive Approach

Abstract

Discovering new ways to reduce military tension and build peace on the Korean peninsula has become a dominant security agenda item in Northeast Asia. This report is a study of how to cooperatively enhance military transparency between North and South Korea based on a conceptual framework of information production and exchange. After examining the current situation in Korea, the report proposes a conceptual framework of enhancing military transparency between the two Koreas. Four general information production and sharing activities that can increase military transparency are identified. Key considerations that affect feasibility and practicality of transparency measures on the Korean peninsula are presented. Comprehensive, “detour,” and gradual approaches are emphasized. Constructive roles for a third party and a hypothetical Korean Peninsula Transparency Enhancement Organization (KTEO) are of particular interest. Finally, a comprehensive strategy to enhance military transparency is proposed in two ways. First, a basic strategy consisting of a variety of concrete measures is discussed with respect to the conceptual framework. Second, a five-stage integrated strategy is presented that could enhance military transparency and build confidence between North and South Korea in a coordinated way. The author emphasizes concrete measures for the first two stages of enhancing military transparency.

Acronyms

ATMS	Authenticated Tracking and Monitoring System
CBMs	confidence-building measures
CCEJ	Citizen's Coalition for Economic Justice
CD	cooperative demonstration
CM	cooperative monitoring
CMC	Cooperative Monitoring Center
CPUF	Committee for the Peaceful Unification of the Fatherland
CWC	Chemical Weapons Convention
DMZ	Demilitarized Zone
DPRK	Democratic People's Republic of Korea
GRIT	Graduated Reciprocation in Tension Reduction
IAEA	International Atomic Energy Agency
INF	Intermediate Nuclear Forces
JMC	Joint Military Commission
KEDO	Korean Peninsula Energy Development Organization
KPA	Korean People's Army
KTEO	Korean Peninsula Transparency Enhancement Organization
MFO	Multinational Force and Observers
MIA	Missing in Action
MND	Ministry of National Defense
MOMEF	Military Observer Mission Ecuador-Peru
NGO	nongovernmental organization
NTM	national technical means
OSD	on-site devices
OSI	on-site inspection
OSIA	On-Site Inspection Agency
OSS	on-site station
ROK	Republic of Korea
SALT	Strategic Arms Limitation Treaty
SFM	Sinai Field Mission
SSM	Sinai Support Mission
START	Strategic Arms Reduction Treaty
U.S.	United States
UD	unilateral demonstration
UM	unilateral monitoring
UNEF	United Nations Emergency Forces
UNSCOM	United Nations Special Commission

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Executive Summary

Military transparency is the level of knowledge that parties have regarding other parties' intentions, behaviors, policies, and postures in the military area. The core of increasing military transparency is the production and exchange of information regarding the objects of transparency. Efforts to enhance transparency encompass: (1) information collection activities by one party regarding the other, (2) information revelation activities by one party regarding itself, (3) cooperation in the production and exchange of information, and (4) information assistance activities by a third party.

We can divide the information production or exchange activities that can increase military transparency into four categories, as follows. Unilateral monitoring (UM) is carried out independently by the parties. Cooperative monitoring (CM) is an information collection activity performed by two or more parties acting together. Unilateral demonstration (UD) is an information revelation activity carried out unilaterally by one party. Cooperative demonstration (CD) is an information revelation activity by one party that incorporates the interests and concerns of the other party. In addition, effective transparency activities require both concrete information gathering measures and incentives for adopting them.

The following considerations are important for implementing military transparency measures on the Korean peninsula:

- Considering the sensitivities of the military issues and the tensions between the two Koreas' armed forces, efforts to increase military transparency may face opposition from both sides' military authorities.
- Military affairs between the two Koreas are so tightly entangled with other bilateral or international affairs in political, diplomatic, and economic areas that they can hardly be settled with only a military-centered approach. A *comprehensive approach* involving broad issues in various areas is more plausible.
- Because little experience exists in bilateral military cooperation, it may be wise to take a *detour approach*. At the beginning, the two sides might better focus on nonmilitary affairs where they find common interests, rather than try to resolve the sensitive military issues immediately.
- In a tense relationship, an *incremental approach* in military affairs is particularly important because any ambiguity or misunderstanding can easily increase tension. An initial negotiating strategy may need to put more emphasis on "agreement and implementation," rather than on "importance of the content" of the measures.

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- A third party can play a constructive role. As an alternative to a single country, a consortium similar to the Korean Peninsula Energy Development Organization (KEDO), with the aim of enhancing military transparency on the Korean peninsula, might be established. This hypothetical organization is dubbed Korean Peninsula Transparency Enhancement Organization (KTEO).

Even with the existing tension and mistrust, North and South Korea could start implementing preliminary measures to enhance military transparency. Notably, political and financial burdens of the measures should be small enough that the two sides would be willing to participate. Successful implementation of these measures could help make a breakthrough in the bilateral relations and pave a way for further reducing military tension.

The incremental approach considers transparency measures in five stages. The first stage of initial measures merely initiates information exchange and confidence building. Actual arms control and arms reduction measures would be possible in later stages. A variety of measures would be appropriate for the initial transparency stage, as listed below. The measures are categorized by the four activity types in the conceptual framework.

Cooperative Monitoring (CM)

- Joint use of commercial satellites in nonmilitary topic areas:
 - Investigate land use, water management, and environmental pollution on the Korean peninsula in a joint effort of the two Koreas, possibly led by nongovernmental organizations from the two sides.
- Joint use of monitoring equipment (on-site devices) and data exchange in nonmilitary areas:
 - Exchange of data regarding environmental protection, weather, or agriculture
 - Exchange of seismic data for scientific purposes
 - Use of tracking and monitoring technology (such as the Authenticated Tracking and Monitoring System, or ATMS) for tracking Kumgang Mountain tour cruise ships as they transit between South and North Korea
- Invite military personnel from both Koreas to observe the Multinational Force and Observers (MFO) in the Sinai peninsula or the Military Observer Mission Ecuador-Peru (MOMEP) in South America. U.S./Russian sites like Magna in Utah and Votkinsk in Russia might also be potential destinations for learning about CM activity.
- Perform pilot operations of CM equipment for the DMZ by a third party at a neutral location with similar geographical and weather conditions to the Korean peninsula.
 - Invite the two Koreas to inspect and discuss the results.

Unilateral Demonstration (UD)

- The sunshine policy is important for strengthening North Korea's incentives to engage in UD.
- South Korea could continue already implemented UD measures:
 - Publish a defense white paper
 - Reveal defense budget
 - Reveal postures and structures (organization, line of command, personnel management, military facilities, defense capabilities, etc.),
 - Notify the North of major military exercises, movements, and their annual schedules
 - Invite North Korea to observe major military exercises and movements
- South Korea could also take the following new UD measures:
 - Reveal defense policies and doctrines
 - Invite the Korean People's Army (KPA) to visit certain Republic of Korea (ROK) units

Cooperative Demonstration (CD)

- Invite military officials of North and South Korea to observe European Open Skies flights. The cooperative tests between Hungary and Romania are perhaps most relevant to the two Koreas.
- Perform limited Open Skies flights for environmental assessment, e.g., flood damage assessment over nonmilitary areas, possibly led by nongovernmental organizations of the two Koreas.
- Discuss mutual security concerns. North Korea's weapon-related technology developments, the no-nuclear-weapon status of the U.S. forces in South Korea, and the role of the U.S. forces on the Korean peninsula can be possible agenda items.
- Establish hot-line communication channels between the two military authorities.

After successfully completing the above transparency measures, North and South Korea can continue the transparency process by adopting militarily more meaningful measures. Some measures will be entirely new in character, while others are extensions of those already implemented. At later stages, arms control and arms reduction measures can be feasible, based on the confidence built in these first, very modest measures.

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1. Introduction

The year 1999 is the 51st year since two separate governments were established on the Korean peninsula and the 49th year since the start of the Korean War. The relations between the two Koreas have been antagonistic, with a mixture of conflicts and occasional cooperation. During the Cold War era, the Democratic People's Republic of Korea (DPRK) and the Republic of Korea (ROK), as spearheads of communism and democracy, respectively, competed with each other on the front line of the ideological war. Ultimately, South Korea surpassed North Korea as the Soviet Union and other communist regimes in Eastern Europe collapsed.

However, there were periods when the two sides had a modest degree of cooperation. In the early 1970s, the mid-1980s, and the early 1990s, North-South Korean dialogue was very active. During these periods, the two sides took steps for political reconciliation, positive actions for humanitarian purposes (such as allowing separated families to visit their hometown), and even exchanged cultural and sports visits. There was some economic cooperation as well. On the other hand, bilateral dialogue on military affairs began only in the 1990s. Most notably, Seoul and Pyongyang, in December 1991, signed the Agreement on Reconciliation, Nonaggression, Exchanges and Cooperation, in short, the *basic agreement*. In the nonaggression part of the basic agreement, the two sides agreed, in principle, to negotiate on military confidence building and arms-reduction measures. The North-South Joint Military Commission (JMC) was established for that purpose. The JMC agreed to build a hot line between the two sides' military authorities. Unfortunately, the agreement was not implemented because of the tension resulting from North Korea's nuclear program. Since 1993, there have been no military talks between the two sides.

For the past few years, external and internal environments have improved for reducing military tension on the Korean peninsula. Externally, the bilateral relations between the DPRK and the U.S. have slowly improved since the 1994 Geneva Agreed Framework. In addition, the four-party peace talks are going forward and the two Koreas have become more familiar with arms control negotiations by joining the Conference on Disarmament. Internally, the two Koreas have changed. In the North, after a lengthy mourning period for the late Kim Il-Sung, his son, Kim Jong-Il, debuted as the leader of the nation in September 1998. The anticipated stabilization of the North Korean regime could reduce its fear of being absorbed by South Korea and thus make it more confident and willing to talk with South Korean authorities. In the South, President Kim Dae-Jung has begun his term with more pragmatic views on the relationship with North Korea. The new government proclaimed a "sunshine policy" with three principles toward North Korea: (1) it will not tolerate military aggression from the North, (2) it will not pursue an absorption strategy, and (3) it will actively promote exchanges and cooperation. Therefore, it is now more likely for the two sides to improve bilateral relations than in the past several years.

On the other hand, North and South Korea have never had in-depth negotiating experiences in arms control. South Korea's basic assumption for the bilateral dialogue has been "nonmilitary affairs first, military affairs later," meaning that, considering the sensitivities of military issues, the two sides can approach that area only after mutual confidence is built by cooperating in the political, economic, and social areas. Contrary to these traditional views, this report argues that reducing tensions by enhancing military transparency can help improve relations in other areas.

Observing that arms control issues will become important bilateral agenda items in the near future, this report presents a strategy to enhance transparency in military intentions, behaviors, policies, and postures with emphasis on mutual cooperation.¹ Military transparency measures can be divided into unilateral transparency-enhancing measures and cooperative transparency-enhancing measures. This report proposes a comprehensive transparency-enhancing strategy that incorporates both unilateral and cooperative measures within the framework of mutual cooperation.² Some measures can be immediately implemented without formal agreements. Other measures rely on carrying out existing or new agreements; in this case, these measures become verification measures. All the measures can be regarded as confidence-building measures (CBMs) since enhancing military transparency can lead to increasing mutual confidence.

After examining the current situation in Korea in Section 2, the report proposes, in Section 3, a conceptual framework for enhancing military transparency between the two Koreas. Four conceptual information production and sharing activities that can increase military transparency are identified. In Section 4, key considerations that affect feasibility and practicality of transparency measures on the Korean peninsula are presented; these are elaborated in the appendix. Comprehensive, "detour," and incremental approaches are emphasized. In Section 5, a comprehensive strategy to enhance military transparency is proposed in two ways. First, a basic strategy consisting of a variety of concrete measures is discussed with respect to the conceptual framework. The potential constructive role of a third party or a proposed Korean Peninsula Transparency Enhancement Organization (KTEO) is of particular interest. Second, an integrated strategy is presented (using five stages of arms control between North and South Korea) to implement those measures in a coordinated way. We will highlight those concrete measures that appear to be feasible in the beginning stages of the integrated strategy.

¹ Cooperation in international relations is a phenomenon arising from their interdependent nature. According to Steve Weber, "Cooperation occurs in international relations when states adjust their policies in a coordinated way, such that each state's efforts to pursue its interests facilitate rather than hinder the efforts of other states to pursue their own interests." Steve Weber, *Cooperation and Discord in U.S.-Soviet Arms Control* (Princeton: Princeton University Press, 1991), p. 6. In short, cooperation is goal-oriented behavior by concerned parties to recognize their mutual interests and to adjust their policies in order to achieve the interests.

² Some unilateral measures can be jointly performed for mutual cooperation or can be initiated by one of the parties in order to foster cooperative environments to induce similar responses from the other party.

2. Increasing Possibilities of Arms Control on the Korean Peninsula

There is a consensus that it is essential to limit and reduce the military forces of North and South Korea in order to reduce tension between them. Without proper control of the armed forces, real progress in sustaining peaceful relations cannot be expected. Thus, as the efforts to build peace on the peninsula grow, added importance will be given to arms control and disarmament. Recently, several important external and internal factors indicate that arms control in Korea is becoming more likely.

2.1 External Factors

2.1.1 Gradual Improvements of the DPRK-U.S. Relations

Since the signing of the Geneva Agreed Framework³ in October 1994, the DPRK and the U.S. have made slow progress in improving their relations. Based on the Agreed Framework, the two sides have held various dialogues and taken positive steps in political, economic, and military areas.

North Korean authorities have placed a high priority on improving relations with the U.S. In proportion to the improvement of the bilateral relations with Washington, Pyongyang may become confident of its survival and be willing to have formal dialogue with Seoul. Therefore, improving relations between Washington and Pyongyang will be an important factor for reducing tension and realizing arms control between the two Koreas.

2.1.2 Four-Party Talks

The ongoing four-party talks will become a forum where the parties can discuss arms control issues on the Korean peninsula. South Korea and the U.S. originally proposed the four-party talks in April 1996. There were four general meetings as of January 1998. The four parties agreed that establishment of a peace system and reduction of military tension were the two major purposes of the talks. When the four-party talks begin to negotiate on detailed measures to reduce tension on the peninsula, the military transparency measures proposed in this report could be possible agenda items.

2.1.3 Two Koreas' Memberships in the Conference on Disarmament

The two Koreas have joined the Geneva Conference on Disarmament. This will have a positive influence on the bilateral arms control environment by providing them with opportunities to participate in the international arms control negotiations and thus to become more acquainted with arms control in general.⁴

³ The Agreed Framework froze the alleged North Korean nuclear weapon program in exchange for two light-water reactors and various other measures.

⁴ North and South Korea joined the Conference on Disarmament on June 17, 1996.

Many negotiating agenda items at the Conference on Disarmament are related to security policies of the two Koreas. Regular participation in the negotiations and decision making at the forum will help officials of the two countries have better understandings of arms control and encourage them to make policies in line with international arms control trends.

2.2 Internal Factors

2.2.1 Better Possibilities of Improving Inter-Korean Relations

As previously mentioned, both of the two Koreas have gone through internal changes and thus, the inter-Korean dialogue has better prospects than in the past several years. When the dialogue resumes fully, arms control will be a key agenda item. This report presumes that North Korea is in the process of gradual changes and will accept military arrangements with South Korea if they are consistent with DPRK national interests.

Based on the three principles of the sunshine policy, the Kim Dae-Jung administration has taken such policy steps as promoting bilateral trade, allowing for tourism on Kumgang Mountain, and strengthening humanitarian aid to North Korea. On August 15, 1998, President Kim Dae-Jung proposed to North Korea the formation of a permanent dialogue mechanism represented by both sides' ministerial-level officials.

On the other hand, North Korea's policy toward South Korea seems less positive than the South expected. In August, Pyongyang asked Seoul to change its policies regarding the presence of U.S. forces in South Korea, the National Security Law, and joint military exercises with foreign countries,⁵ and rejected President Kim's August 15th proposal. Nevertheless, North Korea has made some policy changes in foreign relations, especially in the economic area. While the *Juche* doctrine⁶ continues to dominate thinking, the DPRK government has demonstrated a certain degree of pragmatism as shown in the establishment of the free trade zone, in changes in the cooperative farm sector to introduce stronger material incentives, and in its request for assistance from the outside.⁷ In September 1998, North Korea changed its constitution and institutionalized some already existing market-economy elements in its society, for example, expanding the scope of personal property and partially allowing for individual businesses.⁸ Within this framework, they also accepted South Korea's policy of separating politics and economy by pursuing limited cooperation with South Korean companies, e.g., the Hyundai Group's Kumgang Mountain tour business.

It may be premature for observers to expect that policy changes on one side will create a prompt opportunity for improving bilateral relations after the ordeal of the past few years. Patience and enduring efforts from both sides are required. In terms of having new opportunities

⁵ *Korean Central News Agency*, August 20, 1998.

⁶ The *Juche* doctrine emphasizes self-reliance, based on revolutionary enthusiasm of the masses, and incorporating "speed battles" for rapid industrialization – *Janes Intelligence Review*, June 1996, p. 272.

⁷ International Monetary Fund, *Democratic People's Republic of Korea: Fact-Finding Report*, November 12, 1997, p. 14.

⁸ National Security Planning Agency's Report to the Intelligence Committee at the ROK Parliament, *Joongang Ilbo*, November 7, 1998.

for North-South Korean dialogue, internal rearrangements and stability of the North Korean regime is expected to produce positive effects. With the official emergence of the Kim Jong-Il regime, North Korea will escape from the fear of absorption by South Korea and may become more willing to talk with its southern counterpart. Although North Korea's response has been less than forthcoming, the ROK government seems to be committed to its sunshine policy.⁹ It is also noted that President Kim is advocating the establishment of a regional security forum in Northeast Asia,¹⁰ which is another positive sign for arms control. Observing these developments, it seems more likely that bilateral relations will improve, compared to the last few years.

2.2.2 Disarmament Desire from the Inside

Economic difficulties in both Koreas have made the authorities of the two governments give genuine consideration to the possibility of reducing defense budgets and armaments. Although North Korea's traditional idea of reducing both sides' armed forces to 100,000 troops may be rhetorical, the economic hardship in the North must have made its authorities consider cutting defense expenditures. In South Korea, the administration is already shrinking the defense budget.

Furthermore, nongovernmental organizations (NGOs) are leading public debates on disarmament. For example, on May 21, 1998, a Declaration Calling for Peaceful Disarmament on the Korean Peninsula was issued with the sponsorship of one of the most prominent NGOs in the South: Citizens' Coalition for Economic Justice (CCEJ). The declaration argued that disarmament is a necessity, not a choice, and asked for the following three steps: (1) North and South Korea implement disarmament measures under the basic agreement, (2) the two sides carry out confidence-building measures within the four-party peace talks, and (3) the ROK military cut its budget by managing its resources effectively. It is a very unusual event for such a respected NGO to call for disarmament measures in South Korea.

3. A Conceptual Framework for Enhancing Military Transparency

There is no authoritative academic definition of what transparency means.¹¹ Even scholars working on transparency have differences in their definitions. For example, Nancy Gallagher views transparency as "knowing what other countries are actually doing when they claim to be in compliance."¹² Ann Florini defines transparency as "the provision of information by an actor about its own activities and capabilities to other actors."¹³ Ronald Mitchell describes

⁹ For example, on November 20, 1998, amid the disturbances made by North Korea's suspected underground nuclear site and the spy ship that was repelled by the South Korean navy, President Kim Dae-Jung reconfirmed that his administration will keep pursuing a sunshine policy. *Joongang Ilbo*, November 21, 1998.

¹⁰ For example, in his address at the Beijing University on November 12, 1998, President Kim proposed to establish a multilateral security forum among the two Koreas, the U.S., China, Russia, and Japan. *Korea Herald*, November 13, 1998. There is growing interest in this issue in the U.S., too. Interview with Katy Oh, The Institute for Defense Analyses, December 17, 1998.

¹¹ Discussions with Ronald Mitchell of University of Oregon, October 11, 1998.

¹² Nancy Gallagher, "The Politics of Verification: Why 'How Much?' Is Not Enough," *Contemporary Security Policy*, vol. 18, no. 2 (August 1997), pp. 139-140.

¹³ Ann Florini, "A New Role for Transparency," *Contemporary Security Policy*, vol. 18, no. 2 (August 1997), p. 51.

promoting transparency as “fostering the acquisition, analysis, and dissemination of regular, prompt, and accurate regime-relevant information.”¹⁴ A major reason for the lack of a commonly agreed upon definition of transparency may be that the history of research on this subject is very short. Only recently, in-depth academic research has begun on transparency.

Transparency is the openness or the levels of knowledge that parties have regarding other parties’ intentions, behaviors, policies, and postures. In this report, transparency is more broadly defined to incorporate the above mentioned viewpoints. That is, increasing transparency is defined as eliminating uncertainties and making ambiguities clear through:

- information collection activities by one party regarding the other,
- information revelation activities by one party regarding itself,
- cooperative production and sharing of information, and
- information assistance activities by a third party.

Transparency-enhancing measures can perform four functions. First, they reduce one party’s uncertainties regarding the intentions, behaviors, policies, and postures of the other party and thus reduce chances of misunderstanding and misjudgment. Second, they can provide time for early warning, response, and damage control if a violation does occur. Third, by moderating the crisis and preventing conflict, they will help manage a hostile relationship in a more stable way. Fourth, they can facilitate political reconciliation by reducing tension and building mutual confidence.

The core of increasing military transparency is the production and exchange of information regarding the objects of transparency. In this section, we mainly focus on the conceptual framework of information production activities of the two sides. In Section 5, potential concrete measures are presented within this framework.

3.1 Categorizing Information Production Activities

In this report, we designate the party desiring information as the *seeker* and the respondent party as the *respondent*. Information production activities are then distinguished according to the following two concepts.

First, depending on who is the information producer, monitoring and demonstration are distinguished. Monitoring is an information collection activity performed by the seeker regarding the other side (the respondent) either with or without cooperation of the respondent. Demonstration is an information revelation activity carried out by the respondent to provide information about itself to the seeker.¹⁵

¹⁴ Ronald Mitchell, “Sources of Transparency: Information Systems in International Regimes,” *International Studies Quarterly*, vol. 42 (1998), p. 109.

¹⁵ The conceptual distinction between monitoring and demonstration is based on Kenneth Abbott’s viewpoint in “‘Trust but Verify’: The Production of Information in Arms Control Treaties and Other International Agreements,” *Cornell International Law Journal*, vol. 26 (Winter 1993), p. 4. Instead of Abbott’s terms (verification and

Second, according to how information is produced, cooperation is discerned from unilateral action. Cooperation means that the respondent cooperates in the information collection activities of the seeker. Conversely, the seeker cooperates in the information revelation activities of the respondent. For example, a promise not to interfere with an information collection activity is a form of cooperation that can help the seeker. On the other hand, a unilateral action means that there is no cooperative exchange between the seeker and respondent.

Based on this conceptualization, four information production activities can be identified in the bilateral relationship: (1) unilateral monitoring (UM), (2) cooperative monitoring (CM),¹⁶ (3) unilateral demonstration (UD), and (4) cooperative demonstration (CD). In addition, effective transparency activities require both a mechanism to increase knowledge¹⁷ and incentives to participate.¹⁸ Based on this conceptual analysis, the four information production activities are explained as follows.

3.1.1 Unilateral Monitoring (UM)

Unilateral monitoring is carried out independently by the seeker. Among the four activities, UM is the most widely performed national activity. Intelligence gathering by means of national technical means (NTM) is a UM activity.

UM is driven by the natural asymmetry of information between the parties where one party has good knowledge of itself but has uncertainties regarding the other side. The incentives are increased in times of tension, particularly when societies are very secretive.

3.1.2 Cooperative Monitoring (CM)

Cooperative monitoring is an information collection activity performed by the seeker and the respondent working together, usually based on an agreement. There are various CM measures¹⁹ to increase the knowledge level of the seeker. They can be classified into two groups, as follows:

1. ***Measures that directly increase information collection ability*** include various formats of on-site inspection (OSI), manned on-site station (OSS), unmanned on-site devices (OSD), and cooperative aerial inspection.

assurance), this report uses monitoring and demonstration because they are thought to be proper terms that carry more precise meanings.

¹⁶ Cooperative monitoring in this report is defined more narrowly than the concept used in the Cooperative Monitoring Center (CMC), Sandia National Laboratories. The CMC regards cooperative monitoring more broadly, incorporating not only CM but also some aspects of UD and CD described in this report.

¹⁷ Ronald Mitchell used the term “capacity” instead of knowledge in “Sources of Transparency: Information Systems in International Regimes,” *International Studies Quarterly*, vol. 42 (1998), p. 116. But “capacity” can be confused with the seeker’s technical and human capacity in the case of monitoring.

¹⁸ Ronald Mitchell, *ibid.*, pp. 116, 118, 121.

¹⁹ In this report, a particular information production activity is distinguished from the specific measures that consist of that activity. For example, “UM” refers broadly to the unilateral monitoring activity while a “UM measure” is the detailed measure to provide the information.

2. **Measures that enhance the “monitorability” of objects** include coordination of objects in order to facilitate monitoring,²⁰ passive and active noninterference measures,²¹ identification measures,²² tamper-indicating tags, and location measures.²³

Several potential applications of CM technologies in Korea are proposed in the concrete measures of Section 5.

The underlying motivation for participating in CM is to reduce tension, suspicion, and uncertainties in order to improve security. Given the inherent information asymmetry, as situations become more tense or as countries are more prone to secrecy, CM becomes more important; at the same time, encouragement to engage in CM by third parties becomes more important. The role of a third party can vary from simple encouragement to provision of detailed rewards for participation in CM. Of course, careful design of CM measures is necessary to avoid revelation of information not included in the agreed CM.

3.1.3 Unilateral Demonstration (UD)

Unilateral demonstration is an information revelation activity carried out unilaterally by the respondent and thus assists the seeker. Generally, there is no formal agreement between the two sides. Examples of UD are publication of a defense white paper or other documents that may contain the defense budget, force structure and policies, or major weapon test data. Other measures could include invitation of military personnel to visit military units, or notification and observation of major military exercises and movements.

The incentives for revealing information are primarily to defuse a tense situation through reducing an adversary’s suspicions or to encourage reciprocal actions from the other side. International measures to help maintain domestic acceptance of UD can be very important. There are other considerations as well. The recipient can compensate the respondent for his efforts or refrain from criticizing what is revealed in order to encourage further UD activity.²⁴ Third parties can offer important support or encouragement, too.

²⁰ For example, a complete ban of certain items or activities is a form of coordination of information collection objects that makes it easier to monitor than a partial ban.

²¹ For instance, all major arms control agreements after the Limited Test Ban Treaty of 1963 stipulate that neither party will interfere with each other’s NTM (passive) or deliberately act to conceal restricted activities from monitoring (active).

²² For example, SALT II stipulates “functionally related observable differences” to distinguish heavy bombers that are permitted to carry missiles from other large aircraft.

²³ For instance, the INF Treaty designates specific areas for dismantling treaty-limited items.

²⁴ For example, International Atomic Energy Agency did not criticize President de Klerk of South Africa when he acknowledged the existence of his country’s nuclear weapons program. Instead, the IAEA was patient enough to cooperate with South Africa for three years to clarify the truthfulness of de Klerk’s statement and to confirm that the country halted the program. Rodney Jones and Mark McDonough, *Tracking Nuclear Proliferation: A Guide in Maps and Charts*, 1998 (Washington, D.C.: Carnegie Endowment for International Peace, 1998), p. 243.

3.1.4 Cooperative Demonstration (CD)

Cooperative demonstration is an information revelation activity by the respondent that incorporates the interests and concerns of the seeker. CD adds cooperation to UD. CD can make a greater contribution to confidence building than UD since the respondent attempts to meet the needs of the seeker. CD may also have the effect of institutionalizing UD measures.

Many of the CD measures are realized when UD measures are implemented mutually by both sides. That is, unilateral notification is replaced by mutual notification and unilateral revelation of information by mutual revelation. In addition, CD can include Open Skies measures, use of hot-line communication channels, mutual notification of dangerous events, establishment of consultative mechanisms, and discussion of mutual security concerns.

The respondent's incentives to reveal information are basically the same as in UD except the two sides, based on reciprocity, exchange the same information with each other. Thus, each side gains as much as it loses. Moreover, cooperation assures that the information exchanged is relevant to both parties' concerns.

The framework for individual information production activities is summarized in Table 1. Here we emphasize the measures to increase knowledge about the objects in comparison to the incentives that might encourage participation. Some incentives may derive from a desire for an improved security situation. Other incentives, as noted above, may come from third-party encouragement and compensatory support. Feasible measures for Korea will be introduced in detail in the discussion of Section 5.

Table 1. Framework for Individual Information Production Activities

	Increase Knowledge Level	Incentives
UM	<ul style="list-style-type: none"> • Develop NTM capabilities 	<ul style="list-style-type: none"> • Inherent information asymmetry • Tense relations • Secretive policies
CM	<ul style="list-style-type: none"> • Increase information collection ability <ul style="list-style-type: none"> – Various formats of OSI – Manned OSS, unmanned OSD – Cooperative aerial inspection • Enhance monitorability of information collection objects <ul style="list-style-type: none"> – Coordination of objects – Passive/active noninterference measures – Identification measures – Tamper-indicating tags – Location measures 	<ul style="list-style-type: none"> • Improved security through better knowledge • Inherent information asymmetry • Tense relations • Secretive policies • Third-party encouragement • Reassurance against collection of collateral information

Continued on the next page...

Table 1. Framework for Individual Information Production Activities, continued

	Increase Knowledge Level	Incentives
UD	<ul style="list-style-type: none"> • The respondent mostly knows about itself 	<ul style="list-style-type: none"> • Improve security through reducing adversary's suspicions • Encourage respondent's reciprocal UD by seeker's UD • Compensate for losses from demonstration, if any <ul style="list-style-type: none"> – Third-party compensation may be important • Refrain from criticizing any anomalies revealed from demonstration
CD	<ul style="list-style-type: none"> • Increase the respondent's ability to choose better objects for information revelation 	<ul style="list-style-type: none"> • Basically the same as in UD • Same demonstration measures carried out, based on reciprocity

3.2 An Example: The Sinai Experience

The peace-building process followed by Egypt and Israel in the Sinai peninsula is a successful example in which various information production activities were performed in a mutually reinforcing way to improve military transparency and build confidence between the two parties.²⁵ After the October War in 1973, Egypt and Israel entered into the process by signing the Sinai Separation of Forces Agreement in January 1974 and the Sinai Interim Agreement in September 1975. They gradually enlarged the buffer zone and improved transparency and, based on the trust built, finally signed the peace treaty in March 1979.

In the peace-building process, the role of a third party was critical. The United Nations (UN) dispatched UN Emergency Forces II (UNEF II) to perform the peace-keeping mission in 1974. UNEF II carried out on-site inspections and patrols in the disengagement zones. In 1975 the U.S. established the Sinai Support Mission (SSM) and its operating arm, the Sinai Field Mission (SFM), to fully participate in verifying the implementation of the agreements. SFM was responsible for ground sensors and on-site inspections, while the U.S. Air Force also performed independent reconnaissance flights. After the peace treaty was signed, the Multinational Force and Observers (MFO) was established in 1981 to supervise the treaty implementation. The roles

²⁵ For details on the Sinai experience, refer to Mohamed Abdel Ghani El-Gamasy, *The October War: Memoirs of Field Marshall El-Gamasy of Egypt* (The American University in Cairo Press, 1993); Brian Mandell, *The Sinai Experience: Lessons in Multimethod Arms Control Verification and Risk Management* (Ottawa: Department of External Affairs, Canada, 1987); Michael Vannoni, *Sensors in the Sinai: A Precedent for Regional Cooperative Monitoring*, SAND96-2574 (Albuquerque, New Mexico: Sandia National Laboratories, reprinted June 1998).

played by UNEF II and SFM were transferred to MFO. Currently, the MFO consists of 1,896 troops and civilians from 11 countries.²⁶

Both Egypt and Israel had strong incentives for monitoring because of the need for information in this hostile situation. The UM measures the two sides performed were (1) to maintain national surveillance stations in the buffer zone, and (2) to operate other NTM tools, including aerial reconnaissance flights.

The CM measures in the Sinai peninsula were facilitated by the active participation of the third parties: UNEF II, the U.S., and MFO. In particular, the U.S. did not spare its efforts to provide technical, human, and financial support. For instance, the U.S. constructed a national surveillance station in the buffer zone for Egypt. To compensate for the withdrawal of troops and for the acceptance of cooperative monitoring, the U.S. provided Israel with various political, economic, and military rewards.²⁷ The following CM measures were accepted in the Sinai to increase knowledge:

- On-site inspections in the buffer zone by UNEF II, SFM, and MFO
- Operation of three watch stations and four unmanned ground sensor fields by SFM
- Inspections of the two sides' national surveillance stations by SFM
- Aerial inspection by the U.S. and MFO

Egypt and Israel received the same information from these measures. It was also a CM measure for the two sides' liaison officials to accompany UNEF II personnel in carrying out inspections.

CD played a part too. The two countries operated a Joint Commission and a Liaison Office system to resolve compliance problems and to communicate.

An important lesson of the Sinai experience in terms of confidence building is that the two hostile nations implemented a transparency enhancement regime successfully and could move forward to building political confidence. Through successful implementation of the agreements, the two sides were able to assure each other of their intentions, build confidence, and finally reach the peace treaty of 1979.

²⁶ The Multinational Force and Observers, *Annual Report of the Director General* (Rome: MFO, January 1998), p. 3.

²⁷ From the U.S., Israel obtained such concessions as bilateral military cooperation, assurances on Israel's oil supply and consultations in the event of Soviet military intervention in the Middle East. Michael Vannoni, *Sensors in the Sinai: A Precedent for Regional Cooperative Monitoring*, p. 29.

4. Key Considerations for Enhancing Military Transparency on the Korean Peninsula — A Summary

There are ten key considerations in designing a strategy to enhance military transparency in Korea. Only a strategy that takes the following into account will have both feasibility and practicality: (1) possibilities of military reluctance, (2) asymmetries of the two Koreas' information collection capabilities, (3) linkage of military and nonmilitary affairs, (4) "detour" approach from nonmilitary to military affairs, (5) incremental and step-wise approach, (6) the constructive role of a third party, (7) geographical and postural characteristics of the Korean peninsula, (8) combination of technical and human elements, (9) tacit acceptance of national technical means, (10) possible use of civilians instead of military personnel. See the Appendix for a thorough discussion of each consideration. In particular, we draw upon comparisons with the Sinai experience in discussing these considerations.

5. A Comprehensive Strategy to Enhance Military Transparency on the Korean Peninsula

In Korea, the existing information production activities are unilateral. This report proposes a comprehensive strategy to enhance military transparency between North and South Korea. According to the reciprocal relationship, the two Koreas are both the seeker and the respondent. The strategy is designed to increase transparency of each other's intentions, behaviors, policies, and postures through monitoring and demonstration activities.

Implementing the following *basic* strategy and *integrated* strategy could enhance military transparency in Korea. The basic strategy is a set of measures to carry out individual information production and exchange activities. The integrated strategy establishes several stages and allocates measures into each stage according to feasibility. The integrated strategy identifies the feasible measures that can be taken at each stage.

5.1 Basic Strategy

In order to implement information production and sharing activities in Korea, both concrete information gathering measures and incentives for adopting them are needed. It is of particular importance to note that incentives from third parties may be necessary to encourage the two sides to participate in the activities.

Furthermore, to promote cooperation, the South may develop experience with some UM technologies (such as the use of commercial satellites and on-site devices for nonmilitary purposes) in hopes of eventual cooperation with the North. The South may also implement certain UD measures to encourage reciprocal cooperative response from the North.

5.1.1 Unilateral Monitoring (UM)

Under the information asymmetry relationship between the two Koreas, there are constant incentives for each side to collect information about the other. Whenever bilateral tensions increase, the two sides' incentives for collecting information by UM increase.

To increase knowledge levels regarding each other, North and South Korea may need to develop their own NTM capabilities. Lack of certain technical capabilities may lead the two sides to ask for direct or indirect assistance from a third party. Providing equipment and helping research and development of the technologies are examples of direct assistance. Providing a regular or *ad hoc* supply of information is an example of indirect assistance.

The ROK has received indirect assistance from the U.S. However, direct assistance seems to be limited.²⁸ The DPRK had received indirect assistance from the Soviet Union before the collapse of the USSR. As its relationship with Russia improves, it is possible that the bilateral intelligence cooperation will resume. For example, the Russian space observation center was prompt to confirm Pyongyang's statement that a satellite was launched on August 31, 1998.²⁹ This indicates that North Korea may have notified Russian officials in advance of launching the satellite,³⁰ which signals a possible increase of bilateral intelligence collaboration.

Both Koreas can take advantage of the commercially available satellite images for unilateral monitoring. Commercial satellites have already been used in such areas as the environment, agriculture, and resource exploration. Some satellite images with good resolution can be used to improve military transparency between North and South Korea. In acquiring satellite images, the country of origin might be important. Purchasing images from countries that do not have strong security ties with either of the two Koreas, such as India or France, may be helpful in introducing cooperative elements into UM image analysis.

5.1.2 Cooperative Monitoring (CM)

5.1.2.1 Potential Cooperative Measures to Increase Knowledge Levels

Most CM measures to increase knowledge levels presume the existence of agreements on limiting or reducing armaments. We can divide the potential measures into two broad categories: direct and indirect.

First, there are measures to directly enlarge one side's information collection capabilities in cooperation with the other side. On-site inspections, manned on-site stations, unmanned on-site devices, and cooperative aerial inspection are included in this category. Instead of military personnel, civilians from both sides can be employed or a suggested Korean Peninsula Transparency Enhancement Organization (KTEO) can be used as a multilateral organization. Each CM measure can have several formats depending on the level of cooperation and they can be implemented incrementally.

- ***On-site inspection (OSI):*** OSI can be performed by human observation of major military facilities and equipment. Previously, North and South Korea have demanded OSI rights at various military bases and other sites. Detail of scrutiny can be increased gradually.

²⁸ Interview with the ROK MND officials, October 28, 1998.

²⁹ *ITAR-TASS News Agency, BBC News*, September 5, 1998.

³⁰ For example, Vladimir Yakovlev, the head of the Russian rocket forces, was quoted as saying that Russia had been notified about the launch in advance. However, other officials denied that there was prior notification. The Nautilus Institute for Security and Sustainable Development, *NAPSNet Daily Report*, August 31, 1998.

- ***On-site station (OSS):*** The core of OSS is the presence of human beings at the site. OSS can be developed initially by reorganizing the existing ground observation posts near and inside the Demilitarized Zone (DMZ). In later stages of transparency, new OSS can be deployed along the boundaries of the DMZ and further inside each side's territories.³¹
- ***On-site device (OSD):*** Two formats can be considered in using OSD in the military area: (1) monitoring anomalies in the DMZ and (2) monitoring the weapon storage facilities when the two sides agree on the withdrawal of a certain number of major weapons from the front. Initially, the first format may need encouragement from a third party because the two Koreas are not accustomed to using monitoring technologies cooperatively. OSD will become an important part in the process of operating OSS as well.³²
- ***Cooperative aerial inspection:*** Cooperative aerial inspection can develop in a series of gradual stages depending upon the specific context of the agreement, for example, deployments or reduction of armaments.

Second, measures can indirectly increase each side's information collection capabilities by improving the monitorability of agreed on objects. Coordination of observed objects, passive/active noninterference measures, identification measures, tamper-indicating tags, and location measures are all included in this category, as follows:

- ***Coordination of observed objects:*** The two Koreas could select major offensive weapons, instead of troops, as the relevant arms control objects.³³ That way, the agreement could focus on objects that are more readily monitored.
- ***Noninterference measures:*** A noninterference measure is to display major offensive weapons outdoors at specified frequencies and durations per year. It also can be agreed not to use camouflage or other concealments that can hamper monitoring by satellites or aircraft.
- ***Identification measures:*** If North and South Korea agree on conversion of weapons to peaceful purposes (e.g., converting aircraft fighters to trainers), identification measures can be used to distinguish weapons permitted under the agreement from items converted to nonmilitary purposes.
- ***Tamper-indicating tags:*** Tamper-indicating tags can be attached to major offensive weapons that have been removed from service but not destroyed. The inactive status can be checked during OSI. Tags can also be used on weapons remaining in service.

³¹ Because many of the major military facilities in North Korea are placed underground, South Korean military officials put stronger emphasis on OSI and OSS than NTM and cooperative aerial inspection. Interview with the ROK military officials, October 30, 1998.

³² Various OSDs are commercially available. In the Sinai, seismic, acoustic, magnetic, strain, and infrared sensors and video cameras were used. Currently available technologies have superior capabilities to those used in the 1970s.

³³ Troops have many disadvantages for monitoring. They are too numerous, difficult to identify with remote monitoring, easy to hide, difficult to distinguish from civilians, and may move swiftly.

- **Location measures:** An example of a location measure is to designate storage or destruction sites for weapons withdrawn from the front. These sites could be made subject to OSI.

Sensitivities to military affairs may lead to a “detour” approach, which uses the CM technologies in the nonmilitary affairs first and later moves to the military affairs. The relevant technologies are commercial satellites and OSDs. This means that a UM measure may be converted into a CM measure by mutual agreement. Possible areas of cooperation are those where the two sides have common concerns. Initial emphasis on environmental issues matches common interests for both sides because environmental pollution and floods have emerged as important social and economic problems.

- Joint use of commercial satellites:
 - **Environmental area:** As an immediate step, NGOs³⁴ in the two Koreas could investigate the sources of environmental pollution on the Korean peninsula and North Korea’s frequent floods, and to identify cooperative solutions.
 - **Military area:** Environmental cooperation with commercial satellite images might lead to gradual military transparency exchanges. These might start as simple exchange of images of major military facilities, exercises, and movements. Then, they could grow to joint analysis of the images, joint education and training of technical personnel, and the establishment of a center for joint analysis of the images at Panmunjom.
- Joint use of OSD and data exchange in nonmilitary areas:
 - **Environmental:** OSD can be used in the nonmilitary area at the nongovernmental level, which will increase the two sides’ familiarities with cooperative use of monitoring devices. Some OSD might be used in environmental protection, weather forecasting, water use management, or agriculture.
 - **Scientific research:** For example, both sides might exchange seismic data for scientific research purposes.³⁵
 - **Use of Authenticated Tracking and Monitoring System (ATMS):** In 1998, North Korea agreed to allow South Korean tourists to visit Kungang Mountain. The mountain has the most beautiful scenery in Korea, and visiting the mountain is a lifetime dream for many Koreans. The cruise ships are escorted by each side’s navy in their sea area, respectively. Although both sides’ military are presumed to track the course of the cruise ships, ATMS

³⁴ There may be no NGOs in North Korea. However, in order to facilitate cooperation, South Korea could accept the NGO status of an entity introduced by North Korean authorities.

³⁵ It is typical that major research organizations or universities having programs on geology have some seismic data collection equipment. If this is not the case in North Korea, such equipment could be supplied by the academic communities to assist the North’s educational development.

technology could be used to locate and check the safety of the ship.³⁶ The merit of the ATMS is that the data can be received any place where a portable computer system is equipped and a communication line is set up. Even nongovernmental organizations could use the technologies. For example, the partners in North-South tourism, the Hyundai Group, and the Committee for the Peaceful Unification of the Fatherland (CPUF) could set up portable systems in Seoul and Pyongyang to track the cruise ships in near-real time.

When the parties' NTM capabilities are limited (as in Korea) or the area where NTM could be used is restricted (as in the Sinai),³⁷ a third party's assistance may be crucial, particularly in aerial and satellite imaging. For example, the two Koreas might allow for the U.S. to carry out reconnaissance flights and to distribute the information equally to the two sides.³⁸ Or, they might propose to establish a joint U.S.-Russia or U.S.-China technical information cooperation committee to provide the two Koreas with reconnaissance information collected on or around the Korean peninsula.³⁹ Establishing a regional satellite monitoring center could be a feasible CM measure in the long run.⁴⁰

5.1.2.2 Third Party Role in Encouraging the Two Koreas to Participate in CM

A third party can be important for encouraging North and South Korea to participate in cooperative monitoring. A third party can either be a single country or a UN organization, as in the Sinai. On the other hand, a consortium similar to the Korean Peninsula Energy Development Organization (KEDO), with the aim of enhancing military transparency on the Korean peninsula, could be established. This hypothetical organization is dubbed Korean Peninsula Transparency Enhancement Organization (KTEO).

KTEO could be financed and administered by member states. KTEO could have a monitoring arm with similar functions as the SFM in the Sinai (that is, carrying out on-site inspection and operating ground sensors). The Military Observer Mission Ecuador-Peru (MOMEPE), which is supervising the border dispute between those two countries, is another example of the usefulness of a multilateral collaboration.⁴¹ Human resources could be called

³⁶ The ATMS monitors and collects sensor information through the International Maritime Satellite (INMARSAT) communication system. J. Lee Schoeneman and Eric Fox, *Authenticated Tracking and Monitoring System (ATMS): System Description* (Albuquerque, New Mexico: Sandia National Laboratories, NST-071, December 1997).

³⁷ Reconnaissance flights of Egypt and Israel were limited to the middle of the buffer zone and only the U.S. could fly the whole zone.

³⁸ Because it is presumed that both sides benefit equally from agreeing on a third party's use of NTM, a third party's participation is regarded as a CM measure.

³⁹ In this regard, it is noted that, based on the experiences of UNSCOM, authorities of the U.S., Russia, Europe, and Japan discussed the possible use of national intelligence satellites for crisis management and peace keeping. "Cooperative Recon Gains Momentum," *Aviation Week & Space Technology*, October 9, 1995, pp. 28-29.

⁴⁰ Notably, in July 1985, Sweden proposed that neutral and nonaligned countries possess an arms control and conflict observation satellite to verify the implementation of international arms control agreements and collect information regarding disputed regions. Bhupendra Jasani, "Satellite Monitoring-Programmes and Prospects," in Bhupendra Jasani and Toshibomi Sakata, eds., *Satellites for Arms Control and Crisis Monitoring* (Oxford: Oxford University Press, 1987), pp. 41-43.

⁴¹ MOMEPE consists of the two countries and four guarantor states (the U.S., Chile, Brazil and Argentina.) A group (a few dozen) of inspectors from the guarantor states perform OSI on the border. Military officials from Ecuador and Peru accompany the inspectors as observers. Regarding the activities of MOMEPE, refer to David Palmer, "Peru-

upon by major member states, as in KEDO and MOMEF. KTEO might be formed within the framework of the ongoing four-party peace talks. The two Koreas, the U.S., and China could become key member states governing activities of KTEO and other countries could provide financial and technical assistance. If successfully implemented, KTEO could be developed into a regional transparency regime or a verification apparatus of a regional cooperative security agreement in the future.

A third party could take other incremental steps to foster favorable circumstances under which both Koreas could begin CM activity. First, it could invite North and South Korean personnel to the MFO in the Sinai, or the MOMEF in South America, to observe a successful peacekeeping operation. The major concerns in the MFO and the MOMEF are the roles of a regional organization and procedures of OSI. Invitations to visit the Intermediate Nuclear Forces (INF) bilateral monitoring stations at Votkinsk in Russia and Magna in Utah⁴² would also lead to better understanding of CM activities. The main focus in Votkinsk and Magna are the maintenance of OSSs at these key sites and some technical inspection procedures.

Measures to acquaint the two sides with CM technologies could be taken by a third country or KTEO. Familiarity measures could develop gradually. For example, detection systems for the DMZ could be tested in the following stages, with no obligation to reduce troops at the front during the tests:

- Demonstrate CM technologies at a neutral location with geographical and weather conditions similar to the Korean peninsula and invite the two Koreas to examine and discuss the results
- Move the test area to the DMZ, perform a pilot operation, and have similar discussions
- Have the two Koreas perform a pilot operation under a third party's mediation at the DMZ
- Have the two Koreas fully operate the CM technologies in the DMZ and later expand the scope to the inside of their territories (e.g., place OSD on the strategic corridors deep inside of each other's territories)

The effects of third-party assistance would be doubled if the party could provide North and South Korea with concrete rewards. For example, the two Koreas could be provided with a variety of assistance to facilitate CM activity or to satisfy their interests in other areas of their concerns. Security guarantees, financial and technical assistance, and better trade relations are examples.

On the Korean peninsula, if the U.S. or KTEO could provide technical, financial, diplomatic, political, and military assistance, it could facilitate CM activities. Particularly, in the military area, the following incentives might be needed:

Ecuador Border Conflict: Missed Opportunities, Misplaced Nationalism and Multilateral Peacekeeping," *Journal of Interamerican Studies & World Affairs*, vol. 39, no. 3 (Fall 1997), pp. 109-148; David Mares, "Deterrence Bargaining in the Ecuador-Peru Enduring Rivalry: Designing Strategies Around Military Weakness," *Security Studies*, vol. 6, no. 2 (Winter 1996/97), pp. 91-126.

⁴² According to the INF Treaty, the U.S. and Russia operate one OSS at each other's missile production facility.

- For DPRK: South Korea and the U.S. might guarantee that CM would not cause any military disadvantages by reconfirming their peaceful intentions, and halting large-scale military exercises that appear to threaten the North
- For ROK: The U.S. could compensate for risks that might be caused by CM by increasing intelligence support and reconfirming the security alliance with the South

The two Koreas may require additional incentives to accept OSI concepts. Outside parties may help them devise an on-site inspection process that prevents inspectors from collecting collateral information. This has been addressed carefully in international arms control treaties. START I, for example, specifies the maximum number of spare flashlight bulbs and length of rulers that inspectors may carry.⁴³ A simpler and easier way is to standardize, if possible, and computerize the reporting format for the inspectors. This method was successfully used in the Sinai peninsula,⁴⁴ and could be adopted in Korea, as well.⁴⁵ A concept of managed access used in the Chemical Weapons Convention (CWC) is another measure. The procedure limits the inspectors' access to the sensitive materials and facilities that are irrelevant to treaty verification.

5.1.3 Unilateral Demonstration (UD)

5.1.3.1 Potential Measures to Increase Self-Knowledge

In demonstration activities, the knowledge level is self-knowledge of the respondent.

Unilateral demonstration requires both a will to release information and also accurate knowledge of one's own situation. In reality, the parties may not have complete understanding of every aspect of its military affairs. The more efforts North and South Korea put into periodic updates of major weaponry and sensitive materials, the more effective their UD measures would be.⁴⁶

5.1.3.2 Measures That ROK Can Take to Encourage DPRK to Participate in UD

South Korea's UD measures may offer important incentives to encourage the North to take reciprocal actions. In this case, the South's goal would be to build trust and eventually convert its UD measures to CD measures in collaboration with North Korea. South Korea can

⁴³ START I, Protocol on Inspections, Annex 8.

⁴⁴ The United States Sinai Support Mission, *Peace in the Sinai* (Washington, D.C.: The U.S. Department of State, 1982-1983), p. 10.

⁴⁵ In the nonmilitary area, reducing the possibility of revealing collateral information by agreeing on a clear and simple reporting form has provided the respondent with incentives to reveal information. Ronald Mitchell, "Sources of Transparency: Information Systems in International Regimes," *International Studies Quarterly*, vol. 42 (1998), p. 126.

⁴⁶ North Korea successfully launched a three-stage, intermediate-range missile on August 31, 1998. Four days later, the North revealed a detailed track record of the missile and proclaimed that the purpose was to put a satellite into an orbit. *Korean Central News Agency*, September 4, 1998. Without the North's voluntary revelation, suspicions would have been worsened. Therefore, Pyongyang's prompt announcement was a UD measure.

utilize the concept of Graduated Reciprocation in Tension Reduction (GRIT)⁴⁷ to take some modest UD measures. GRIT is a strategy to encourage mutual cooperation gradually and to facilitate negotiations between the parties with sustained hostilities. The purpose of using a GRIT concept is to change North Korea's negative perception of South Korea and to build mutual confidence for strengthening cooperation.⁴⁸ Under the GRIT concept, South Korea would take the following UD measures to demonstrate to North Korea its goodwill and intention to reduce tension:

- Publication of a defense white paper
- Revelation of the defense budget
- Revelation of defense policies and doctrines
- Revelation of military administrative structures and status
- Invitation to KPA military officials to visit certain units
- Notification and release of annual schedule of major military exercises and movements
- Invitation to observe major military exercises and movements

Among these, South Korea has already published its annual defense paper, revealed a rough defense budget, and notified and invited observers for major military exercises. ROK has also opened the military structure partially by taking part in the UN Register of Conventional Arms. For the Team Spirit exercises that concern North Korea most, South Korea has invited North Korea to observe the exercises since 1982. Unfortunately, North Korea rejected these invitations; however, members of the Neutral Nation's Supervisory Committee have observed the exercises.⁴⁹

5.1.3.3 Measures to Encourage ROK to Participate in UD

South Korea may need incentives to engage in UD measures, as well. There are two important considerations. First, if the South's UD measures appear to damage the current comparative advantage of technical monitoring over the North, additional intelligence support from the U.S. might be necessary to allay the concerns of the military. Second, the ROK government must secure strong support of various domestic factions for the UD measures. Having domestic support is more difficult in Seoul than in Pyongyang because South Korean society is more pluralistic, has more divergent interest groups, and is more strongly influenced by public opinion. Third-party encouragement may be helpful in maintaining domestic support.

⁴⁷ Charles Osgood, "Suggestions for Winning the Real War with Communism," *Journal of Conflict Resolution* (December 1959), pp. 295-325; Charles Osgood, *An Alternative to War or Surrender* (Urbana: University of Illinois Press, 1962).

⁴⁸ In reality, there were cases where the GRIT concept was utilized. Kennedy administration officials notified Charles Osgood that important principles of GRIT were used to formulate U.S. policies during the Cuban Missile Crisis. Alexander George, "Strategies for Facilitating Cooperation," Alexander George, Philip Farley and Alexander Dallin, eds., *U.S.-Soviet Security Cooperation: Achievements, Failures and Lessons* (Oxford: Oxford University Press, 1982), p. 706. During the negotiations of neutralizing Austria, the steps taken by the Soviet Union can be interpreted as based on the GRIT concept. Deborah Larson, "Crisis Prevention and the Austrian State Treaty," *International Organization* (Winter 1987), pp. 34-52.

⁴⁹ Interview with officials of the North-South Dialogue Office, the Ministry of National Unification, October 28, 1998. The Team Spirit exercises have been stopped since 1994.

5.1.4 Cooperative Demonstration (CD)

In CD, the two sides take the same demonstration measures based on reciprocity. Reciprocal exchanges of the same information make each side gain as much as it loses. That is, North Korea's information revelation is compensated by South Korea's revelation of the same information and vice versa.

Many of the possible CD measures to be taken by the two Koreas are those listed above for UD. In addition, new measures of CD can include:

- **Open Skies:** Measures like those of the Open Skies treaty are important to CD. The first step might be to invite officials from both Koreas to observe the continuing Open Skies test flights in Europe.⁵⁰ The cooperative tests between Hungary and Romania are perhaps most relevant to the two Koreas. The On-Site Inspection Agency (OSIA), which is responsible for U.S. participation in Open Skies, has already expressed unofficial interest in making the necessary arrangements.

In detail, an Open Skies agreement can be implemented based on a detour approach and gradualism. For example, the two sides can start from joint and limited overflight over certain areas of each other's territories for collecting scientific data for assessing environmental damage, pollution levels, and natural disasters. At the beginning, it may be better for NGOs from the two sides to initiate this process. When a certain level of trust is established, the two sides can move on to the military area and take incremental steps.⁵¹

- **Talks:** Exchanging views and holding seminars on defense policies and doctrines are important CD measures. According to the European experience, seminars on military doctrine would contribute to mutual understanding of each other's defense policies and postures.⁵² Since the military doctrine is a fundamental guideline of using military forces, candid discussions about the doctrines will help the two Koreas have better understandings of the other side's intentions and concerns as reflected in the doctrine.

⁵⁰ Twenty-seven member states of the Open Skies Treaty in Europe are now performing bilateral Open Skies flights even though the treaty is not yet ratified. Historic rivals Hungary and Romania have signed and implemented a separate bilateral Open Skies agreement.

⁵¹ For an example of gradual steps in the military area, refer to Amy Smithson and Seongwhun Cheon, "'Open Skies' over the Korean Peninsula: Breaking the Impasse," *Korea and World Affairs*, Spring 1993, pp. 57-77.

⁵² For example, the military doctrine seminars held in January 1990 and October 1991 between the North Atlantic Treaty Organization and the Warsaw Pact countries are good illustrations proving the importance of such seminars between the antagonistic parties. The two sides had in-depth, extensive discussions on each other's military postures and structures (organization, a line of command, personnel management, military facilities, defense capabilities, etc.), military exercises, and expenditures. With regard to the military exercises, the problems caused by large-scale exercises were discussed frankly. Mutual exchange of information in the seminars contributed to improving transparency and mutual understanding, building confidence, and achieving stability in the two sides' military relations. Peter Almquist, "The Vienna Military Doctrine Seminar: Flexible Response vs. Defensive Sufficiency," *Arms Control Today*, vol. 20, no. 3 (April 1990), pp. 21-25; Wendy Silverman, "Talking 'Sufficiency' in the Hofburg Palace: The Second Seminar on Military Doctrine," *Arms Control Today*, vol. 21, no. 3 (December 1991), pp. 14-17.

Another type of CD measure in this regard would be to recognize the existence of security concerns of the other side and to discuss the concerns. Accepting the other side's concerns as a subject of discussion has an element of cooperation by recognizing the existence of the problem. Delivering one's own positions on the concern of the other side is a form of cooperative demonstration. Agreement to talk about the broad issues of mutual concerns, including the U.S. forces in South Korea, in the ongoing four-party talks is an important CD measure.

- ***More detailed protocols for the basic agreement:*** Based on the basic agreement, mutual notification and release of annual schedules of major military exercises and movements and mutual observation of them are feasible CD measures. Scale and frequency of military exercises and movements can be regulated in a step-wise way. In the long term, the two Koreas could supplement the basic agreement with other protocols to prohibit dangerous activities that could escalate into inadvertent war.
- ***Hot lines:*** Establishing communication channels for emergencies is a well-known CD measure. According to the basic agreement in 1991, North and South Korea agreed on establishing a hot line between the two military authorities. It failed at that time because bilateral dialogue stopped during the subsequent North Korean nuclear problem. When formal negotiations resume, a hot line would be one of the most promising agenda items. Crisis management would argue for the revitalization of other existing dialogue forums such as the Military Armistice Committee and Joint Military Commission.

5.2 An Integrated Strategy

An integrated strategy is necessary for making effective use of various measures presented above. An integrated strategy is designed according to a series of stages based on an order of feasibility. In the following, we classify the feasible information production and exchange measures into five stages. In reality, the stages may be different, because they are based on future prospects; thus, the classification of the measures into each stage may also be different.

This report establishes five stages according to progress made in the bilateral arms control on the Korean peninsula. The first is the *initial transparency stage*. This includes those measures that North and South Korea can take independently or that need only modest cooperation in the nonmilitary areas. The second is the *strengthened transparency stage* where militarily meaningful transparency measures are implemented. During the first two stages, agreements on arms control or disarmament are not needed. The third is the *arms control stage* where the two Koreas agree on having limitations on military operation and deployment. At this stage, some of the offensive weapons deployed in the front would be withdrawn to the rear. The fourth stage is the *arms reduction stage*, where major offensive weapons are reduced. The fifth stage is the *peaceful coexistence stage*, where a solid and stable peace is maintained through continuing the transparency and tension reduction of the previous four stages.

5.2.1 Stage One: Initial Transparency

Under the existing tension and mistrust, DPRK and ROK start seeking preliminary measures to enhance military transparency. Notably, political and financial burdens of the measures at the first stage should be small enough so that the two sides would be willing to start the process. The following measures, categorized by the four activity types, could be appropriate for the initial transparency stage.

Unilateral Monitoring

- Independent use of commercial satellites for military purposes

Cooperative Monitoring

- Joint use of commercial satellites in the nonmilitary areas
 - NGOs from DPRK and ROK investigate land use, water management, and environmental pollution problems in Korea
- Joint use of monitoring equipment such as OSD and data exchange in the nonmilitary areas
 - Exchange data regarding environmental protection, weather, or agriculture
 - Exchange seismic data for scientific purposes
 - Use tracking and monitoring technology (such as ATMS) for tracking Kumgang Mountain tour cruise ships
- Invite military personnel from both Koreas to observe MFO, MOMEF, Magna, and/or Votkinsk
- Have a third party perform pilot operations of CM equipment for the DMZ at a neutral location with similar geographical and weather conditions to the Korean peninsula.
 - Invite the two Koreas to inspect and discuss the results.

Unilateral Demonstration

- ROK reinforces already implemented UD measures
 - Publish defense white paper
 - Reveal defense budget
 - Reveal military administrative structures and status
 - Notify the North of major military exercises and movements and their annual schedules
 - Invite the North to observe major military exercises and movements

- ROK also takes the following new UD measures:
 - Reveal defense policies and doctrines
 - Invite the KPA to visit certain ROK units

Cooperative Demonstration

- Invite DPRK and ROK military officials to observe European Open Skies flights between Hungary and Romania
- Perform limited Open Skies flight for environmental assessment, e.g., flood damage
- Discuss mutual security concerns. North Korea's weapon-related technology developments, the no-nuclear-weapon status of the U.S. forces in South Korea, and the role of the U.S. forces on the Korean peninsula can be possible agenda items.
- Establish hot-line communication channels between the two military authorities

5.2.2 Stage Two: Strengthened Transparency

Based on the experience built in Stage One, DPRK and ROK continue the transparency process by adopting militarily more meaningful measures. Some measures are new and others are the extension of those begun in the first stage. The level of confidence at Stage Two is still short of being able to make an arms control agreement. Assistance from a third party may be important to facilitate the process.

Cooperative Monitoring

- Reorganize ground observation posts in the DMZ into permanent OSSs that share some specific data between both sides, e.g., operational status of the stations
- Exchange commercial satellite images of major military facilities, exercises, and movements
- Continue testing CM technology for the DMZ (without troop removal, so this would be a “no risk” field trial)
 - A third party's pilot monitoring operation area is moved to a DMZ sector.
 - Later, DPRK and ROK assume responsibilities for the pilot operation of CM equipment in the DMZ.
- Strengthen DPRK & ROK's incentives to engage in CM. U.S. and/or KTEO participation is essential.
 - Technical: Train DPRK and ROK personnel, supply, and assist for research and development.
 - Diplomatic: Foster favorable environments for performing CM measures in Korea.

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- Military: For DPRK, guarantee no military disadvantages from taking CM measures. As a reaffirmation of their peaceful intentions, the U.S. and ROK might consider halting large military exercises that appear threatening to the North. For the ROK, increase intelligence cooperation and continue to affirm U.S.-ROK security alliance.

Unilateral Demonstration

- Both sides continue with Stage One measures, perhaps to the point of establishing an informal tradition. The U.S. and/or KTEO continue to encourage this process.
- Assure KPA that no military disadvantage would result from its UD measures.

Cooperative Demonstration

- The two Koreas implement, based on mutual agreement, many of the UD measures performed by ROK during Stage One
- In addition, the following measures could be taken:
 - Begin Open Skies flights for military purposes
 - Exchange views and seminars on defense policies and doctrines
 - Operate Military Armistice Committee and Joint Military Commission as forums for exchanging views on security issues or for crisis management

5.2.3 Stage Three: Arms Control

Based on the experiences in the first two stages of military transparency, and with strong outside encouragement, DPRK and ROK can make some arms control agreements. For example, part of the offensive weapons can be withdrawn from the front. The scale, frequency, and dangerous nature of major military exercises and movements could be restricted. Arms control agreements of Stage Three may necessitate some transparency measures (especially CM measures) to be used for verifying compliance with the agreements.

Cooperative Monitoring

- Direct measures:
 - Perform OSIs in an incremental way. Agree to standardize and, if possible, computerize the reporting form and restrict inspectors' access, based on the managed access approach.
 - Deploy an OSS on both boundaries of the DMZ.
 - Use OSDs to monitor the storage sites for offensive weapons pulled back from the front.
 - Begin cooperative or third-party aerial inspection. Allow the U.S. or KTEO to carry out aerial reconnaissance flights over the Korean peninsula.

- Indirect measures:
 - Coordinate agreed on objects by focusing on major offensive weapons.
 - Deploy offensive weapons without concealment for a certain period of time.
 - Designate storage sites for weapons withdrawn from the front.
- Commercial satellites:
 - Perform joint analyses of image information of major military facilities, exercises, and movements.
 - Educate and train technical personnel of both sides together, or at least provide equal training in separate venues.
- Operate CM technologies in the DMZ and expand the area gradually. Operation of technology may be related to troop reduction at this point.

Cooperative Demonstration

- Expand the military Open Skies measures started at the second stage.

5.2.4 Stage Four: Arms Reduction

Stage Four requires that a variety of transparency measures and verifiable arms control agreements have established a strong sense of confidence and cooperation between the two Koreas. Thus, a way is paved for them to negotiate and reach arms reduction treaties. The disarmament era in Korea begins at Stage Four.

Cooperative Monitoring

- Direct measures:
 - Perform more intrusive OSI and deploy OSSs further inside of each side's territories.
- Indirect measures:
 - Distinguish between permitted weapons and those converted to peaceful purposes or disabled.
 - Attach tamper-indicating identification tags to treaty-limited and disabled items.
- For using commercial satellites, establish a center for joint analysis of satellite images.
- Form a U.S.-Russia, U.S.-China, or KTEO technical information cooperation committee for Korea to provide independent intelligence information to both sides.

5.2.5 Stage Five: Peaceful Coexistence

Through successful implementation of transparency measures, arms control and arms reduction agreements, solid peace has been established. A stable and peaceful coexistence between DPRK and ROK is maintained.

Cooperative Monitoring

- A bilateral cooperation experience can be extended for regional purposes. For instance, a regional satellite monitoring center could be established, based on the cooperative experience between the two Koreas.

6. Conclusions

This report proposes a comprehensive transparency enhancement strategy for improving military transparency on the Korean peninsula under the conceptual framework of information production. The comprehensive strategy provides a variety of transparency measures that can be taken unilaterally, bilaterally, or with third-party assistance. These transparency measures are categorized according to five stages of arms control between North and South Korea. There should be particular emphasis on the modest measures that can be readily taken by the two Koreas at the early stages of the transparency process. The political and financial burdens of these measures are small enough that the two sides may be willing to participate.

This strategy can help make a breakthrough for reducing tension and also improving relations between the two Koreas. Because the strategy provides various verification measures for arms control agreements in the future as well, it could become an important element for establishing a new peace system on the Korean peninsula.

Observing the linkage between military and nonmilitary affairs in Korea, this report argues that a comprehensive approach encompassing broad issues in many areas is more appropriate than a narrow military-centered approach. Considering the tense relationship between the two Koreas, this report also argues that a detour approach may be desirable, starting from the nonmilitary affairs in the beginning and later moving to the military affairs. In the military area, an incremental approach is also needed for facilitating the transparency enhancement process.

During the process, it is necessary for the two sides to have strong support and assistance from the third parties that have common interests in peace on the Korean peninsula. Because military affairs are entangled with other issues and involve not only the two Koreas but also several other countries, there would be certain limitations for North and South Korea working alone to increase military transparency and move forward to controlling and reducing armaments. Keeping the constructive function played by the KEDO in the nuclear field in mind, it may be appropriate to establish a consortium to enhance military transparency in Korea: the Korean Peninsula Transparency Enhancement Organization (KTEO).

Specific measures that could be taken in the earliest stages of an incremental process of enhancing military transparency have been identified. Transparency measures in nonmilitary areas may readily occur between the two Koreas, while measures touching on military affairs

may benefit greatly from assistance from third parties, such as the U.S. or a KTEO. The following are concrete cooperative monitoring and cooperative demonstration measures:

Cooperative Monitoring (CM)

- Data exchange on nonmilitary topics such as environmental assessment and disaster mitigation. The two Koreas could cooperate directly to utilize commercially available meteorological and environmental sensors to address problems of pollution, flooding, and land use management.
- Tracking and safety sensors on the Hyundai-sponsored cruise ships going to Kumgang Mountain in North Korea could be observed from Seoul and Pyongyang and provide data to supplement military tracking methods.
- Third parties might introduce new military transparency measures by increasing the two Koreas' exposure to methodologies in use elsewhere in the world. For example, Korean delegations could be invited to observe peacekeeping operations in the Middle East (MFO) and South America (MOMEPA). Alternatively, Koreans could observe the U.S./Russian monitoring stations at Magna, Utah or Votkinsk, Russia that are operating for the INF Treaty.
- Third parties could also test monitoring sensors that could be useful in the DMZ in locations of similar climate and invite Koreans to examine the results. This might lead to "zero risk" tests in the DMZ; the sensors would merely be supplemental to existing observation posts.

Cooperative Demonstration (CD)

- Military officials of both Koreas could be invited to fly as observers on Open Skies flights between Hungary and Romania. This could lead to early cooperative flights for flood damage assessment, perhaps by nongovernmental organizations of both Koreas.

These and other potential transparency measures might be feasible in the early stages of improving trust and confidence between the two Koreas. We also identify transparency measures that might be useful in later stages, as actual arms control and arms reduction agreements become possible. These measures would rely on a mixture of on-site inspection and sensors to verify arms limitations and increase both countries' early warning capabilities.

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Appendix: Key Considerations for Enhancing Military Transparency on the Korean Peninsula

There are ten key considerations in designing a strategy to enhance military transparency in Korea. Only a strategy that takes the following into account will have both feasibility and practicality: (1) possibilities of military reluctance, (2) asymmetries of the two Koreas' information collection capabilities, (3) linkage of military and nonmilitary affairs, (4) "detour" approach from nonmilitary to military affairs, (5) incremental and step-wise approach, (6) the constructive role of a third party, (7) geographical and postural characteristics of the Korean peninsula, (8) combination of technical and human elements, (9) tacit acceptance of national technical means, (10) possible use of civilians instead of military personnel. In particular, we draw upon comparisons with the Sinai experience in discussing these considerations.

1. Possibilities of Military Reluctance

Considering the sensitivities of the military issues and the hostilities between the two Koreas' armed forces, efforts to increase military transparency may encounter reluctance from both sides' military authorities.

The Korean People's Army (KPA) undoubtedly will want its interests and concerns to be reflected in any policy affecting its operations and status. In order to persuade the North Korean military to accept transparency measures, a variety of incentives may have to be provided in political, diplomatic, and economic areas. Particularly, military incentives may become essential to assure the KPA that transparency measures will not create military disadvantages. In South Korea, too, military reluctance could become an impediment to a political decision to adopt transparency measures. In order to encourage South Korean military to agree on transparency measures, military incentives may be needed to compensate for the losses that might be incurred by implementing the measures.

2. Asymmetries of the Two Koreas' Information Collection Capabilities

There is limited open comparison of the information collection capabilities of North and South Korea.⁵³ However, for designing military transparency measures, it is not necessary to have a complete understanding of each side's information collection capabilities. It is enough to find out one side's comparative advantage over the other side in the major intelligence collection areas.

Table 2 is a comparative analysis of North and South Korea's capabilities in human, surveillance images, and electronics/signals intelligence. We separately rank their strength in

⁵³ For example, Desmond Ball, "Asia - Signals Intelligence in North Korea," *Jane's Intelligence Review*, vol. 8, no. 1 (January 1, 1996), p. 28; Joseph Bermudez, Jr., "North Korea's Intelligence Agencies and Infiltration Operations," *Jane's Intelligence Review*, vol. 3, no. 6 (June 1, 1991), p. 269.

analyzing the available information.⁵⁴ A “1” indicates a strong capability and a “3” indicates a weak capability.

Table 2. Comparison of the Two Koreas’ Information Collection Capabilities

	South Korea	North Korea
Human	3	1
Surveillance Images	1	3
Electronics/Signals (Technology)	1	2
Electronics/Signals (Analysis)	2	1

North Korea has a significant edge over South Korea in the use of human agents. The pluralistic and liberal system of South Korea makes it easy for North Korean agents to enter and work in South Korea. South Korea depends on NTM to narrow the intelligence gap. South Korea dominates in imagery, but mostly depends on U.S. assets; the South’s own capabilities are limited. Considering this problem, the ROK Ministry of National Defense (MND) is planning to develop its own reconnaissance satellites by the year 2005.⁵⁵ In signals and electronics, South Korea also has a comparative edge over North Korea in the technical areas. However, the North seems to have an advantage over the South in terms of analysis expertise due to frequent replacements of South Korean personnel.

In short, South Korea is superior in macro information based on its technical edge, while North Korea is superior in micro information because of its human resources.

3. Linkage of Military and Nonmilitary Affairs

Military affairs between the two Koreas are so tightly entangled with other bilateral or international affairs in political, diplomatic, and economic areas that they can not be settled with an exclusively military-centered approach.

South Korea and the U.S. already have experienced this reality in dealing with North Korea’s alleged nuclear weapon development program. The military issue of preventing the DPRK from developing nuclear weapons has been resolved with a “package deal” involving many issues in different areas. For example, the U.S. promised North Korea (1) not to interfere with internal affairs, (2) to respect its sovereignty, (3) to improve diplomatic relations, (4) to mitigate economic sanctions, (5) to provide two 1,000 MWe light-water reactors, and (6) to guarantee not to use military forces, including nuclear weapons. Sticking to the same strategy of linkage, North Korea has asked for rewards from the U.S. for cooperation in the location and return of the remains of U.S. soldiers from the Korean War, freeze of North Korean missile

⁵⁴ Interview with the ROK military officials, October 29, 1998.

⁵⁵ Remarks of the President of the Agency for Defense Development at the Defense Committee of the ROK Parliament, *Joongang Ilbo*, November 4, 1998.

development, and inspection of the suspected underground nuclear site.⁵⁶ It is important to note that providing incentives to North Koreans can contribute to changing their negative perceptions of the Seoul-Washington alliance.

Under the linkage situation, South Korea and its allies may have to meet North Koreans' demands in various areas in order to induce them to accept military transparency measures. That is, a *comprehensive approach* involving broad issues in various areas of politics, diplomacy, economics, and military affairs is more plausible.⁵⁷

4. "Detour" Approach from Nonmilitary to Military Affairs

Military confrontation for half a century can make it difficult for North and South Korea to agree on and implement even modest military measures that look easy to outsiders.

Because little experience exists in military cooperation, it may be wise to take a "detour" approach. At the beginning, it is better to focus on nonmilitary affairs where the two sides find common interests, rather than try to resolve the sensitive military issues.

For instance, in the beginning of the transparency-enhancing process, North and South Korea can increase their familiarity with monitoring technologies by first applying them to nonmilitary affairs where both sides have common interests. NGOs or universities can be utilized as alternative channels to government authorities. When the two sides become familiar with using technologies for cooperative purposes, they can move on to the military areas.

5. Incremental and Step-wise Approach

The Sinai experience is a historic illustration where an incremental approach succeeded in the peace building process, from military disengagement to peace treaty. Henry Kissinger's negotiation strategy of resolving differences in a step-wise way was a critical element.⁵⁸ Egypt and Israel agreed on and implemented the measures that were feasible at each point of time and, based on the experiences and lessons of carrying out these measures, they moved forward to a next step. With this gradual approach, they overcame sequentially the risks and dangers that arose at each stage.

In the hostile relationship between North and South Korea, an incremental approach in military affairs is particularly important because any ambiguity or misunderstanding can easily

⁵⁶ For example, North Koreans have argued that the U.S. should compensate for and withdraw economic sanctions against them if Washington wants Pyongyang to stop exporting their missiles. Dana Priest and Sandra Sugawara, "N. Korea Missile Threatens Nuclear Pact," *Washington Post*, September 1, 1998, p. A15. During the third round of missile talks, North Korea reportedly asked for \$1,000M per year in the following 3-5 years in return for halting missile exports. *Joongang Ilbo*, October 8, 1998. North Korea once demanded that the U.S. pay \$300M for inspecting the underground site under suspicion. Don Kirk, "U.S. Refuses to Buy North Korea Access," *International Herald Tribune*, November 20, 1998.

⁵⁷ Leon Sigal expressed a similar view with an example of North Korean missile exports. Leon Sigal, "For Sale: North Korea's Missile Program," *NAPSNet Special Report*, The Nautilus Institute for Security and Sustainable Development, November 11, 1998.

⁵⁸ Mohamed Abdel Ghani El-Gamasy, *The October War: Memoirs of Field Marshall El-Gamasy of Egypt*, p. 326.

cause tension. An initial negotiating strategy would put more emphasis on “agreement and implementation,” rather than on “importance of the content” of the measures.

After implementing easy and convenient measures, North and South Korea could extend the scope of cooperation and move forward to more important measures in the future. For example, the effectiveness of the cooperative monitoring technologies can be demonstrated by a third party in a neutral location and later, the two Koreas can gradually adopt the technologies in Korea.

6. The Constructive Role of a Third Party

The Sinai experience illustrates that a third party can play an important role in managing the peace-building process between hostile countries. Egypt and Israel regarded the presence and monitoring activities of a reliable third party as a useful tool to reduce the possibility of another war. It was important to find a third party that could play a constructive role. In the Sinai, the U.S. gave Egypt and Israel technical, diplomatic, and financial assistance to establish an effective cooperative monitoring regime. The two countries could expand the area of cooperation and resolve difficult problems because they were sure of strong support from the U.S.

A third party can also play a constructive role when North and South Korea negotiate on improving military transparency. However, if a third party is not an international institution but a single country, there may be a problem: The government authorities of the two Koreas might be criticized for allowing too much involvement of a third country into their bilateral security affairs. As an alternative to a single country, a multilateral organization similar to the Korean Peninsula Energy Development Organization (KEDO) might be formed. In Section 5 we offer suggestions for potential roles for a Korea Peninsula Transparency Enhancement Organization (KTEO) that could act as a multilateral third party.

7. Geographical and Postural Characteristics of the Korean Peninsula

Some geographical and postural characteristics in Korea need to be taken into account when developing military transparency measures, as follows:

- The Korean peninsula, especially the border area, is mostly mountainous with heavy vegetation and many animals. It also has rivers and many streams. Highly humid, the weather fluctuates over the four seasons. These conditions can create difficulties in monitoring activities (both technical monitoring and human inspections).
- A relatively stable mechanism exists to manage the armistice situation between North and South Korea. The 155-mile border is tightly fenced and guarded by troops at all times. They are equipped with modest visual aids such as binoculars (visible day and night).

- The Korean peninsula buffer zone is only 4 km wide, which makes it very important to secure early warning capabilities.⁵⁹
- Ten major corridors exist across the Korean DMZ,⁶⁰ which means that significant resources are necessary for covering the corridors.
- In Korea, defense against a small-scale infiltration is as important as defense against a massive invasion. This is because the narrow buffer zone makes it easy to penetrate into each other's strategic areas once passing through the Demilitarized Zone (DMZ).⁶¹ Geographic and weather conditions give the two sides added difficulties to detect small-scale infiltration. This situation partly explains why the two sides tightly control the entire border area with fences and troops.

8. Combination of Technical and Human Elements

In the Sinai peninsula, technical assets were combined with human resources to enhance transparency.⁶² The combination of technical and human elements in the Sinai had synergistic merits. First, the use of various technical equipment minimized the concerns about the possibilities of infringing on sovereignty or espionage. President Sadat insisted that any foreign presence in the Sinai had to be temporary and politically unobtrusive.⁶³ Henry Kissinger had reservations about the presence of Americans in the Sinai and the U.S. Congress was also cautious about stationing U.S. forces on foreign soil in the aftermath of Vietnam War.⁶⁴ Using technology helped limit the size of the foreign contingent, thereby minimizing the appearance of intrusiveness and political risks.

On the other hand, the presence of personnel from the third parties helped keep the buffer zone stable and implement the disengagement agreements successfully. Moreover, use of human resources allowed the parties to have visual confirmation of the anomalies found by technical assets and prevent the development of disputes. The human factor had substantial contributions of practically enhancing transparency, not to mention its symbolic and political significance.

⁵⁹ The distance from the capital to the border is 140 km for North Korea and 42.5 km for South Korea.

⁶⁰ There are four strategic corridors in the eastern part (road numbers 5, 7, 31, 43), three in the central part (road numbers 1, 3, 352) and three in the western part (road numbers 1, 51, 52). Michael Vannoni, *et al.*, *Confidence Building on the Korean Peninsula: A Conceptual Development for the Cooperative Monitoring of Limited-Force Deployment Zones*, SAND97-0583 (Albuquerque, New Mexico: Sandia National Laboratories, April 1997), pp. 26-27 and Appendix E.

⁶¹ For example, in North Korea, Kaesung is 7.5km from the Military Demarcation Line (MDL) and Pyongyang is 140 km. In South Korea, Tongduchon is 18.5km from the MDL and Seoul is 42.5km.

⁶² A study on the Sinai experience defined the transparency regime in the Sinai Peninsula as a technology-intensive system. Brian Mandell, *The Sinai Experience: Lessons in Multimethod Arms Control Verification and Risk Management*, p. 29. But this view neglects the political importance of the presence of the third parties' personnel in the region. It is true that various monitoring technologies were extensively used in the Sinai. However, the political importance of the human presence prohibits concluding that the transparency regime was exclusively technological.

⁶³ Brian Mandell, *The Sinai Experience: Lessons in Multimethod Arms Control Verification and Risk Management*, p. 29.

⁶⁴ Michael Vannoni, *Sensors in the Sinai: A Precedent for Regional Cooperative Monitoring*, pp. 28-29, 35.

In Korea, possibilities exist for either side to accuse the other of infringing on its sovereignty in the transparency process. Especially, North Korea could regard cooperative monitoring technologies as tools for espionage. One way to persuade the North to accept technical monitoring is to apply strict reciprocity in using the technologies. A third party could play a positive role in this aspect. In case of OSI, both Koreas would be worried about the possible infringement of its sovereignty and too much revelation of information. Nevertheless, ROK military has strong preference for OSI.⁶⁵ Therefore, managed access provisions, as in the CWC, would be essential to Korean OSI.

The absence of experience in applying cooperative monitoring technologies for military purposes and the use of massive forces of troops to defend the border would make the human factor important if the two Koreas negotiate on transparency measures.

9. Tacit Acceptance of National Technical Means

The Sinai experience is an excellent example where the hostile countries accepted the mutual use of NTM. The information obtained by the NTM helped make correct judgment regarding each other's intentions and behaviors. It was also used to demand challenge inspections and to resolve compliance disputes.⁶⁶ In the Sinai peninsula, Israel had NTM capabilities that were superior to those of Egypt,⁶⁷ a similar asymmetry exists between South and North Korea.

Egypt and Israel had realistic views on cooperative monitoring (CM) measures and had modest expectations for them.⁶⁸ Both sides recognized the technical limits of CM and understood that CM measures supplemented, but did not substitute for NTM measures. In terms of guaranteeing their national security, Egypt and Israel relied more heavily on their own forces and intelligence capabilities than on the cooperative monitoring measures.⁶⁹ To Israel, the CM was a "safety margin" to obtain public and parliamentary support for the disengagement agreements. To Egypt, it was for face-saving and another tool to deter Israeli forces.⁷⁰

Since mutual acceptance of NTM can have positive effects on increasing knowledge levels, it may be better for the two Koreas to mutually accept (even if only tacitly) certain NTM measures. However, technical asymmetry between the two Koreas may make it difficult for the North to accept the role of NTM. The South would be reluctant to compromise its technical superiority too.

⁶⁵ Interview with the ROK military officials, October 30, 1998.

⁶⁶ Itshak Lederman, "The Arab-Israeli Experience in Verification and Its Relevance to Conventional Arms Control in Europe," *Occasional Paper 2*, Center for International Security Studies, University of Maryland College Park, 1989, p. 17.

⁶⁷ Interview with Israeli army colonel Gidion Netzer at the CMC, November 3, 1998.

⁶⁸ Brian Mandell, *The Sinai Experience: Lessons in Multimethod Arms Control Verification and Risk Management*, p. 25-26.

⁶⁹ Itshak Lederman, *Verification of Conventional Arms Control Agreements in Europe*, Ph.D. Thesis, University of Maryland College Park, 1991, p. 222.

⁷⁰ Ibid.

Therefore, North and South Korea are more likely to agree that, as in the Sinai, Pyongyang is given technical and financial support for unilateral monitoring (UM) while Seoul maintains its technical UM capabilities.

10. Possible Use of Civilians Instead of Military Personnel

In the Sinai, by letting ground-based sensors and OSI be managed by civilians (e.g., SFM personnel and inspectors at the MFO), political problems that could be caused by the military forces of a third party were avoided. When implementing transparency measures in Korea, civilians could carry out many important and positive roles.

The use of civilians could reduce tensions that could arise when military personnel carry out sensitive duties like OSI. Negative images like mutual surveillance and scrutiny could be minimized. In case of conflict during an inspection, confrontation between the two militaries could be avoided and thus, the possibility of peaceful resolution of the situation could be increased. Some may argue that it is difficult to distinguish military personnel from civilians. However, when inspectors wear civilian clothes and do not carry weapons, there would be, at least, fewer possibilities of problems. Personnel of the proposed KTEO, which would be a multilateral organization for enhancing military transparency in Korea, could also consist of civilians from the member states.

7. About the Author

Dr. Seongwhun Cheon is a senior research fellow at the Korea Institute for National Unification. He received his Ph.D. from the University of Waterloo (Canada) in 1989 for his dissertation on *Verification of Arms Control: Mathematical, Political, and Economic Perspectives*. Dr. Cheon has considerable research experience and has published extensively on security and unification issues between North and South Korea and also on regional security matters in Northeast Asia. His most recent publications include *A Study on Increasing Inter-Korean Cooperation under the KEDO Regime with Emphasis on Cooperation Theory* and *Regional Nuclear Cooperation in Northeast Asia: Based on the Experiences of ABACC and EURATOM*.

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